WORKING PAPER NO.1
SUMMARY OF ISSUES

The following issues have been prepared in an effort to obtain initial input from the City of Hayward. Some issues will be answered through the technical development of studies performed throughout the course of the project. Additional Working Papers will be prepared throughout the course of the project development along with technical documents, i.e., a Project Study Report (PSR) and Initial Study Environmental Report, which will respond to the issues identified herein.

No.	Working Paper (WP)
2	Transportation and Right of Way Analysis
3	Grade Separation Concept and Staged Construction
4	Conceptual Cost Analysis
5	Relinquishment Improvements
	Technical Reports
-	Project Study Report *(Combines info developed for WP #2-5 and provides additional data)*
-	Initial Environmental Study Report
-	Pre-Concept Design Drawings

The issues have been grouped according to each Working Paper and Technical Report deliverable as follows:

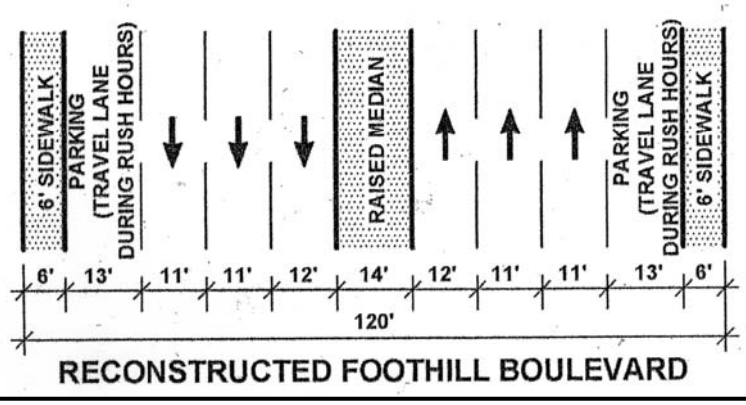
WORKING PAPER # 2
TRANSPORTATION AND RIGHT OF WAY ANALYSIS

A. Conventional Arterial Roadway

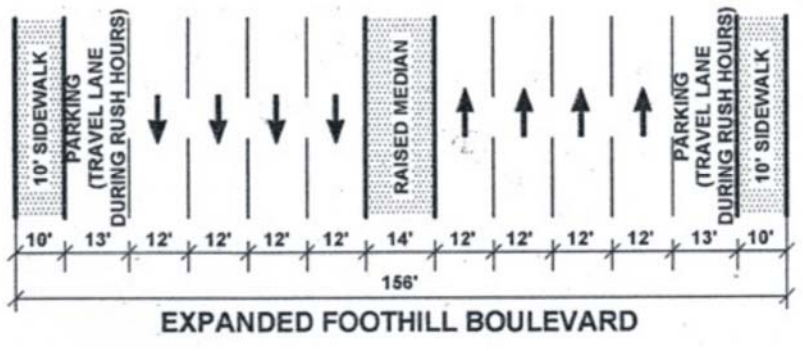
1. What are the final limits and design sections for the proposed corridor?

The project limits of the corridor extend south along Foothill Boulevard beginning at I-580 to Mission Boulevard and then south along Mission Boulevard to Industrial Parkway. In general, Foothill Boulevard between Grove Way and Mission Boulevard consists of three (3) lanes in each direction separated by a raised median island, 8-foot parking shoulders and 10-foot sidewalks on both sides. Mission Boulevard consists of two (2) lanes in each direction separated by a raised median island, 8-foot parking shoulders and 10-foot sidewalks on both sides. The proposed design sections are identified and graphically depicted as follows:

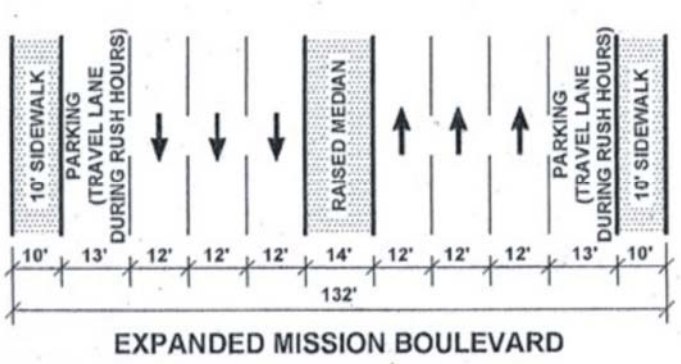
SEGMENT A
Grove Way to City Center Drive



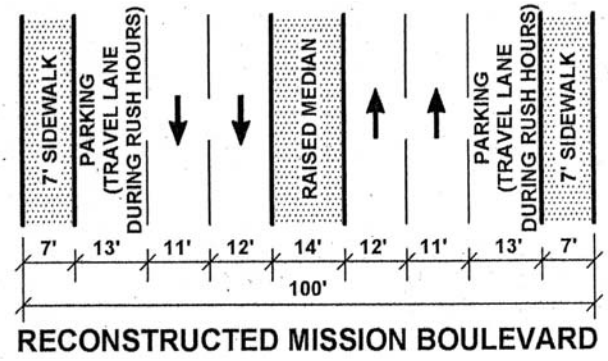
SEGMENT B
City Center Drive to Foothill / Mission



SEGMENT C
Foothill / Mission to Harder Road



SEGMENT D
Harder Road to Industrial Way



2. What are the critical constraints east and west of the corridor?

We currently understand that we will be holding the west curb line and widen the roadway to the east in Segments B and C. Widening within the existing right-of-way will occur within Segments A and D by reducing the width of the sidewalks. Within the latter segments, we evaluate impacts to existing streetscape improvements, utility vaults, and to existing business entryways and driveways.

Critical buildings and/or areas (e.g., the Hayward Plunge) that will need to be protected in place as part of the project as they relate to the proposed street cross sections will be identified.

3. *What specific intersection improvements will be needed in addition to general widening?*

We recognize certain heavily congested intersections such as A/Foothill and Carlos Bee/Mission may need additional turning lanes, which will become apparent through modeling analysis.

4. *Is there a refinement to the grade separation concept that more effectively addresses moving traffic through the Foothill / Mission intersection?*

B. Improvements within County Areas

1. How will any necessary improvements to the I-580 interchange and/or approaches, including the flyover, within the County area be developed and approved?

C. Traffic Congestion

1. *To what extent will traffic congestion be relieved by construction of the project? Will it be improved everywhere, or will there be segments in which improved traffic flow at one location worsens congestion at another (i.e., by permitting more vehicles to pass through one location and arrive at another)?*
2. *What effect would a 1-lane vs. 2-lane widening, within segments B & C have on traffic congestion?*
3. *What effect would a westbound 580 to southbound Foothill flyover connection have on traffic congestion in the corridor?*
4. *Are the traffic signal systems along the corridor fully synchronized and operating at optimal levels?*

We will be addressing these questions by using traffic forecasting models, such as EMME/2, and microsimulation models for traffic operations using VISSIM. A model is, by definition, a simplification of the real world into a more manageable number of variables that can be analyzed. Although a model cannot provide all answers, or cannot provide all answers perfectly, it does provide results that are meaningful in planning major transportation improvements.

The sophisticated computer programs indicated above emulate a mathematical way of describing the structure, performance, and behavior of the physical transportation system through many detailed tasks. Before forecasting future travel, an inventory study is performed to establish relationships among travel choices and other variables in the existing transportation system. Second, the model is "calibrated" to reproduce the current observed travel behavior as accurately as possible. The model forecasts are compared, usually on a street-by-street basis, with known traffic counts taken sometime within the past few years. If the model estimates are reasonably close, the model is ready for use in forecasting future volumes. If the estimates are too large, then further work is done on the model (step one) until an acceptable level of confidence is achieved.

Working in conjunction with the models developed by the City of Hayward and more regional models managed by other agencies, we will develop a focused model for the corridor that will allow alternatives to be quickly and easily tested. The results from the model will be accurate to within 10 to 20 percent on a given street, given an accurate land use plan. However, it is not uncommon in the real world to observe daily traffic variations of “plus or minus 20 percent” on city streets or highways.

Therefore, this level of accuracy is sufficient to determine important features of the road, such as, how many lanes should be provided? This is the reason why travel modeling has achieved widespread acceptance in the transportation planning community, and why it is being applied for many different uses.

D. Parking

1. *What impact will be on residents and businesses for loss of parking during peak hour parking prohibition?*

Our parking occupancy study will answer this question for us.

2. *What effect on traffic congestion will an illegally parked car have (i.e., if it is not moved at the designated time)?*

Using the VISSIM model, we will "park" a car during a peak period simulation to measure the effect on traffic.

3. *How do other agencies operate their arterials that have peak period parking prohibitions? How should Hayward operate theirs?*

By interviewing other agencies, as well as reviewing the VISSIM output as noted above, we will be able to provide recommendations regarding this issue.

E. Side Streets

1. *Which side streets should be closed or partially closed (i.e., right-in/right-out restrictions) to improve traffic flow?*

Insights to community issues in regards to the closure of side streets will be discussed with City staff. Once a strategy is developed, we can test various options of street closures using the VISSIM model and come up with recommendations.

F. Left-turn Movements

1. *Where is the need for left-turns in the area closest to the downtown? Would the roadway operate acceptably if one or more protected left-turns were permitted in this area?*

We will be reviewing both the existing traffic counts and the demand model output to determine if there is a significant need for these movements. Then, we can introduce left-turn movements into the VISSIM model to determine the effects such movements would have on traffic operations and the needed roadway improvements.

G. Safety

1. *Are there any specific improvements that can be incorporated into the project to improve safety?*

Our review of accident statistics maintained by the State will assist us in identifying any trends in the study area, and if there are specific types of collisions that appear with an unusual frequency, we may be able to tailor the project concept to address such an issue.

H. Pedestrians and Bicyclists

1. *In light of right-of-way constraints, can bicycles be accommodated? If not, what are the ramifications of accommodating bicycles?*
2. *Should bicycle traffic continue to be directed to a parallel route with less motor vehicle traffic per the City's Bicycle Master Plan? If so, how?*
3. *Are there any locations where pedestrian crossings should be removed or added? What effect would such changes have on the arterial's operation?*

We will be observing pedestrian and bicycle movements in the field, and will offer suggestions regarding these issues during the study.

I. Bus Service

1. *Should bus stops be created such that the buses stop outside of the traffic lanes? What is AC Transit's position on bus pullouts?*
2. *What effect on operations within the corridor would there be if more buses were added to the corridor?*

The VISSIM model will include the coding of bus routes into the traffic stream so that we can measure the effects of buses stopping in traffic lanes at various frequencies. This can include a concept, for example, of adding more buses on existing route between the college and the BART station.

J. Right-Of-Way

Cost evaluation and implementation of right-of-way takes will be generally discussed under this working paper. More detailed evaluations will be performed during the development of the preferred alignment under the Project Study Report.

WORKING PAPER # 3
GRADE SEPARATION CONCEPT AND STAGED CONSTRUCTION

A. Grade Separation at Foothill / Mission Analysis

1. *How will traffic operate during various construction phases of the grade separation?*

Similar to the comprehensive approach provided by the VISSIM model for traffic congestion issues in general, we will be able to code in specific configurations that will occur during construction of the grade separation to measure their effect on traffic.

2. *How will access to existing parcels surrounding the proposed grade separation be impacted?*
3. *How will the foundation design of bridge structures account for the proximity of the Hayward Fault?*

WORKING PAPER # 4
CONCEPTUAL COST ESTIMATE

Under this working paper, preliminary construction estimates will be provided for the proposed corridor improvements in accordance with current procedures defined by current Caltrans estimating policies. Since the engineering development will be at conceptual levels, contingency factors on the order of 25% to 30% for some items will be applied. Our approach in developing the cost estimates will be to identify as many construction items as we can before applying these contingency factors. This approach will allow for the careful development of overall project cost budgets.

WORKING PAPER # 5
RELINQUISHMENT ANALYSIS

1. *What is the process, opportunities, and constraints related to relinquishment?*

This working paper will identify the general process defined by Caltrans that will need to be undertaken to relinquish existing State-owned roadway improvements along Route 238, 92, and 185 to the City of Hayward. Opportunities associated with achieving the relinquishments will be discussed along with what constraints may be realized. Supporting cost estimates will also be developed.

PROJECT STUDY REPORT

The Project Study Report will be developed through a culmination of information developed in conjunction with Working Papers and the feedback provided by the City of Hayward. Additional issues to be addressed that are outside the Working Papers:

A. Access Issues

1. *How will access be maintained during construction?*
2. *How will major pedestrian movements be maintained and controlled?*
3. *What changes can be made to existing driveway accesses that could improve traffic flows along the corridor?*

B. Utilities

1. *Who owns the existing utilities within the corridor and how will the proposed widening impact them?*
2. *What effects will the relocation of impacted utilities have on the constructability of the overall project?*
3. *How will the planned undergrounding of overhead utilities on Mission Blvd. be incorporated into the project and what funding is available to support this?*

C. Drainage

1. *What impacts to the existing drainage systems within the corridor may occur due to the proposed widening?*
2. *What impacts are anticipated to the San Lorenzo Creek due to the proposed widening?*
3. *What temporary drainage improvements will be required to accommodate the construction staging of the project?*

INITIAL STUDY ENVIRONMENTAL REPORT

A. Environmental Evaluation

1. *What are the predominant environmental issues associated with the project?*
2. *What environmental concerns need to be addressed and to what level of detail?*
3. *What mitigations can be expected for noise, air quality, cultural, biological, socioeconomic, and other environmental issues identified for the project?*
4. *What project funding or other actions could potentially trigger a NEPA process?*

PRE-CONCEPT DESIGN DRAWINGS

A. Design Presentations

1. *What will be shown on the conceptual design drawings?*

The concept drawings will depict the preferred roadway geometrics within the limits of the corridor on top of scaled (1"=40') aerial orthophotos. In addition, existing street right of way, property lines, assessor parcel numbers, pavement striping, new pavement and pavement overlays, and new and modified traffic signals will be shown. Typical sections will be developed and superimposed on these plans.

2. *How will existing landscaping impacts within the corridor be addressed?*

A field review will be performed to identify where existing landscaped areas and trees will be impacted by the proposed improvements. Photo simulations of before and after conditions will be prepared at the Hayward Plunge and the Foothill/Mission grade separation areas. Colored renderings will also be prepared to clearly depict what the proposed grade separation may look like after construction. Prototypical landscape solutions will be prepared to present possible solutions for streetscape solutions for within and outside right of way widening conditions for cost estimating purposes.

3. *Where will the limits of storm drain and utility improvements be shown?*

Existing utilities, i.e., power, gas, telephone, cable, sewer, water, and drainage improvements will be shown on the concept plans as separate drawings. Impacts to the existing utilities will be highlighted on these plans. Limits of overhead electric undergrounding will also be shown. Construction estimates will be based upon these plans.

-- END WORKING PAPER # 1 --